Gigabit Switches

AT-9108
AT-8518
AT-8525
AT-8550

User's Command Guide

Version 2.0

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Allied Telesyn

Simply Connecting the World

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AT-9108, AT-8518, AT-8525, and AT-8550 User's Command Guide

General Switch Commands

Command	Description
show switch	Displays the current switch information.
show version	Displays the hardware and software versions currently running on the switch. Also displays the switch serial number.
show memory	Displays the current system memory information.
reboot {<date> <time> | cancel}	Reboots the switch at the date and time specified. If no time is specified, the switch reboots immediately following the command. To cancel a previously scheduled reboot, use the `cancel` option.
config time <date> <time>	Configures the system date and time. The format is: mm/dd/yyyy hh:mm:ss The time uses a 24-hour clock format.
config devicemode [bridging | iprouting | ipmc | ipqos]	Configures the operating mode of the switch. Specify: ❑ `bridging` — Layer 2 bridging functions only ❑ `iprouting` — Bridging and IP unicast routing functions ❑ `ipmc` — Bridging, IP unicast routing, and IP multicasting functions ❑ `ipqos` — IP flow-based QoS functions The default operating mode is `ipmc`.
config banner {<string>}	Configures the banner string. The maximum number of characters allowed in the string is 256. If no string is provided, the user banner is disabled.
show banner	Displays the user-configured banner.
unconfig switch {all}	Resets all switch parameters (with the exception of defined user accounts) to the factory defaults. If you specify the keyword `all`, the user account information is reset as well.

General Switch Commands *(Continued)*

Command	Description
ping {continuous} {size <number>} <ipaddress>	Sends ICMP echo messages to a remote IP device. Specify: ❑ `continuous` — ICMP echo messages should be sent continuously. ❑ `size <n>` — The size of the packet.
traceroute <ipaddress>	Traces the routed path between the switch and a destination endstation.
telnet <ipaddress> {<port_number>}	Creates a Telnet session from the current CLI session to another host. If the TCP port number is not specified, port 23 is used. Only VT100 emulation is supported.
clear counters	Clears all statistical counters for the switch and ports.
enable license [Basic_L3 | Advanced_L3] <license_key>	Enables a particular software feature license.
show diag	Displays switch software diagnostics.

Switch Management Commands

Command	Description
show management	Displays network management configuration and statistics, including enable/disable states for Telnet and SNMP, SNMP community strings, authorized SNMP station list, SNMP trap receiver list, and login statistics.
show session	Displays the currently active Telnet, console, and Web sessions communicating with the switch.
clear session <number>	Terminates a Telnet session from the switch.
logout | quit	Logs out of a console or Telnet session.
enable idletimeout	Enables a fixed value timer that disconnects all sessions (both Telnet and console) after 20 minutes of inactivity. The default setting is disabled.
disable idletimeout	Disables the fixed value timer that disconnects all sessions.
enable telnet	Enables Telnet access to the switch.
disable telnet	Disables Telnet access to the switch.
enable web	Enables Web access to the switch.
disable web	Disables Web access to the switch.
enable snmp access	Enables SNMP support for the switch.
disable snmp access	Disables SNMP support for the switch.
enable snmp trap	Enables SNMP trap support.
disable snmp trap	Disables SNMP trap support. Does not clear the SNMP trap receivers that have been configured.
config snmp add <ipaddress> {<mask>}	Adds the IP address of an SNMP management station to the access list. Up to 32 addresses can be specified.

Switch Management Commands *(Continued)*

Command	Description
config snmp delete [<ipaddress> {<mask>} | all]	Deletes the IP address of a specified SNMP management station or all SNMP management stations. If you delete all addresses, any machine can have SNMP management access to the switch.
config snmp add trapreceiver <ipaddress> community <string>	Adds the IP address of a specified trap receiver. The IP address can be a unicast, multicast, or broadcast. A maximum of six trap receivers is allowed.
config snmp delete trapreceiver [<ip_address> community <string> | all]	Deletes the IP address of a specified trap receiver or all authorized trap receivers.
config snmp community [readonly | readwrite] <string>	Adds an SNMP read or read/write community string. Each community string can have a maximum of 127 characters.
config snmp syscontact <string>	Configures the name of the system contact. A maximum of 255 characters is allowed.
config snmp sysname <string>	Configures the name of the switch. A maximum of 255 characters is allowed. The default `sysname` is the model name of the switch, such as `9108`, `8518`, `8550`, and so on. The system name in the switch prompt.
config snmp syslocation <string>	Configures the location of the switch. A maximum of 255 characters is allowed.
unconfig management	Restores default values to all SNMP-related entries.

User Account Commands

Command	Description
show account	Displays the account names, access level, number of successful and failed login attempts, and the number of active sessions in the user database.
create account [admin | user] <username> {<password>}	Creates a user account.
delete account <username>	Deletes a user account
config account <username> {<password>}	Changes the password of an existing account.

VLAN Commands

Command	Description
show vlan {<name> | all>}	When used with the keyword `all`, or with no named VLANs, displays a summary list of VLAN names with a portlist and associated status of each. When used with a named identifier, displays port information, including membership list, IP address, and tag information.
create vlan <name>	Creates a named VLAN.
delete vlan <name>	Removes a VLAN.
enable ignore-stp vlan <name>	Enables a VLAN to ignore STP port information. When enabled, all virtual ports associated with the VLAN are in STP forwarding mode. The default setting is disabled.
disable ignore-stp vlan <name>	Allows a VLAN to use STP port information.
config vlan <name> [add | delete] port <portlist> {tagged | untagged}	Adds and deletes ports. You can specify tagged port(s), untagged port(s). By default, ports are untagged.
config vlan <name> tag <vlanid>	Assigns a numerical VLANid. The valid range is from 1 to 4095.
config vlan <name> protocol [<protocol_name> | any]	Configures a protocol-based VLAN. If the keyword `any` is specified, then it becomes the default VLAN. All packets that cannot be classified into other protocol-based VLANs are assigned to the default VLAN for that port.
config vlan <name> qosprofile <qosname>	Configures a VLAN to use a particular QoS profile. Dynamic FDB entries associated with the VLAN are flushed once this change is committed.
config vlan <name> ipaddress <ipaddress> {<mask>}	Assigns an IP address and an optional subnet mask to the VLAN.
config dot1q ethertype <ethertype>	Configures an IEEE 802.1Q Ethertype. Use this command if you have another switch that supports 802.1Q, but uses a different Ethertype. The default value used by the switch is 8100.
unconfig vlan <name> ipaddress	Removes the IP address associated with a VLAN.
enable gvrp	Enables the Generic VLAN Registration Protocol. The default setting is disabled.
disable gvrp	Disables the Generic VLAN Registration Protocol.
config gvrp {listen | send | both | none} {port <portlist> | all}	Configures the sending and receiving GVRP information on one or more ports. Options include the following: ❑ `listen` — Receive GVRP packets. ❑ `send` — Send GVRP packets. ❑ `both` — Send and receive GVRP packets. ❑ `none` — Disable the port from participating in GVRP operation. The default setting is `both`.
show gvrp	Displays the current configuration and status of GVRP.

Protocol Commands

Command	Description
show protocol {<protocol_name> | all}	Displays protocol-related information.
create protocol <protocol _name>	Creates a user-defined protocol.
delete protocol <protocol_name>	Removes a protocol.
config protocol <protocol_name> [add | delete] <protocol_type> <hex_value> {<protocol_type> <hex_value>} ...	Configures a protocol filter. Supported <protocol_type> values include: etype llc snap The variable <hex_value> is a hexadecimal number between 0 and FFFF that represents either the Ethernet protocol type (for EtherType), the DSAP/SSAP combination (for LLC), or the SNAP-encoded Ethernet protocol type (for SNAP).

FDB Commands

Command	Description
show fdb {all | <mac_address> | vlan <name> | <portlist> | permanent}	Displays the switch forwarding database contents.
clear fdb [all | <mac_address> | vlan <name> | <portlist>]	Clears dynamic FDB entries that match the filter. Use the keyword all to clear all dynamic entries.
create fdbentry <mac_address> vlan <name> [blackhole | <portlist> | dynamic] {qosprofile <qosname>}	Creates an FDB entry. Specify the following: ❑ mac_address — Device MAC address, using colon separated bytes. ❑ name — VLAN associated with MAC address. ❑ blackhole — Configures the MAC address as a blackhole entry. ❑ portlist — Port numbers associated with MAC address. ❑ dynamic — Specifies that the entry will be learned dynamically. Used to associated a QoS profile with a dynamically learned entry. ❑ qosname — QoS profile associated with MAC address. If more than one port number is associated with a permanent MAC entry, packets are multicast to the multiple destinations.
delete fdbentry <mac_address> vlan <name>	Deletes a permanent FDB entry.
config fdb agingtime <number>	Configures the FDB aging time. The range is 15 through 1,000,000 seconds. The default value is 1,800 seconds. A value of 0 indicates that the entry should never be aged out.

Port Commands

Command	Description
show port {<portlist>} information	Displays detailed system-related information.
show port <portlist> config	Displays state, link status, speed, and autonegotiation setting for each port.
show port <portlist> stats	Displays port information including physical layer configuration and statistics.
show port {<portlist>} txerrors	Displays real-time transmit error statistics.
show port {<portlist>} rxerrors	Displays real-time receive error statistics.
show port <portlist> collisions	Displays real-time collision statistics for one or more ports.
show port <portlist> packet	Displays a histogram of packet statistics for one or more ports.
show port {<portlist>} utilization	Displays real-time port utilization information.
show port {<portlist>} qosmonitor	Displays real-time QoS statistics.
config port <portlist> auto on	Enables autonegotiation for the particular port type: 802.3u for 10/100 Mbps ports or 802.3z for Gigabit Ethernet ports.
config port <portlist> auto off {speed [10 | 100]} duplex [half | full]	Changes the configuration of a group of ports. Specify the following: ❑ `auto off` — the port will not autonegotiate the settings ❑ `speed` — the speed of the port (for 10/100 Mbps ports only) ❑ `duplex` — the duplex setting (half- or full-duplex)
config port <portlist> qosprofile <qosname>	Configures one or more ports to use a particular QoS profile.
enable port <portlist>	Enables one or more ports.
disable port <portlist>	Disables one or more ports.
enable smartredundancy <portlist>	Enables the smart redundancy feature on the redundant Gigabit Ethernet port. When the smart redundancy feature is enabled, the switch always uses the primary link when the primary link is available. The default setting is enabled.
disable smartredundancy <portlist>	Disables the smart redundancy feature. If the feature is disabled, the switch changes the active link only when the current active link becomes inoperable.
enable sharing <master_port> grouping <portlist>	Defines a load-sharing group of ports. The ports specified in `<portlist>` are grouped to the master port.
disable sharing <master_port>	Disables a load-sharing group of ports.
enable mirroring port <port>	Dedicates a port on the switch to be the mirror port.
disable mirroring	Disables port-mirroring.
config mirroring add [<mac_address> | vlan <name> | port <port> | vlan <name> port <port>]	Adds a single mirroring filter definition. Up to eight mirroring definitions can be added. You can mirror traffic from a MAC address, a VLAN, a physical port, or a specific VLAN/port combination.
config mirroring delete [mac <mac_address> | vlan <name> | port <port> | vlan <name> port <port> | all}	Deletes a particular mirroring filter definition, or all mirroring filter definitions.
show mirroring	Displays the port-mirroring configuration.

Port Commands *(Continued)*

Command	Description
enable learning port <portlist>	Enables MAC address learning on one or more ports. The default setting is enabled.
disable learning port <portlist>	Disables MAC address learning on one or more ports for security purposes. If MAC address learning is disabled, only broadcast traffic and packets destined to a permanent MAC address matching that port number, are forwarded. The default setting is enabled.
show edp	Displays connectivity information for neighboring Allied Telesyn Gigabit switches.

STP Commands

Command	Description
show stpd {<stpd_name> | all}	Displays STP information for one or all STPDs on the switch.
show stpd <stpd_name> port <portlist>	Displays port-specific STP information.
create stpd <stpd_name>	Creates an STPD. When created, an STPD has the following default parameters: ❑ Bridge priority — 32,768 ❑ Hello time — 2 seconds ❑ Forward delay — 15 seconds
delete stpd <stpd_name>	Removes an STPD. An STPD can only be removed if all VLANs have been deleted from it.
config stpd <stpd_name> add vlan <name>	Adds a VLAN to the STPD.
config stpd <stpd_name> hellotime <value>	Specifies the time delay (in seconds) between the transmission of BPDUs from this STPD when it is the Root Bridge. The range is 1 through 10. The default setting is 2 seconds.
config stpd <stpd_name> forwarddelay <value>	Specifies the time (in seconds) that the ports in this STPD spend in the listening and learning states when the switch is the Root Bridge. The range is 4 through 30. The default setting is 15 seconds.
config stpd <stpd_name> maxage <value>	Specifies the maximum age of a BPDU in this STPD. The range is 6 through 40. The default setting is 20 seconds. Note that the time must be greater than, or equal to 2 X (Hello Time + 1) and less than, or equal to 2 X (Forward Delay –1).
config stpd <stpd_name> priority <value>	Specifies the priority of the STPD. By changing the priority of the STPD, you can make it more or less likely to become the Root Bridge. The range is 0 through 65,535. The default setting is 32,768. A setting of 0 indicates the highest priority.
config stpd <stpd_name> port cost <value> <portlist>	Specifies the path cost of the port in this STPD. The range is 1 through 65,535. The switch automatically assigns a default path cost based on the speed of the port, as follows: ❑ For a 10Mbps port, the default cost is 100. ❑ For a 100Mbps port, the default cost is 19. ❑ For a 1000Mbps port, the default cost is 4.

STP Commands *(Continued)*

Command	Description
config stpd <stpd_name> port priority <value> <portlist>	Specifies the priority of the port in this STPD. By changing the priority of the port, you can make it more or less likely to become the Root Port. The range is 0 through 255. The default setting is 128. A setting of 0 indicates the lowest priority.
enable stpd [<stpd_name> | all]	Enables the STP protocol for one or all STPDs. The default setting is disabled.
disable stpd [<stpd_name> | all]	Disables the STP mechanism on a particular STPD, or for all STPDs.
enable stpd port <portlist>	Enables the STP protocol on one or more ports. If STPD is enabled for a port, BPDUs will be generated on that port if STP is enabled for the associated STPD. The default setting is enabled.
disable stpd port <portlist>	Disables STP on one or more ports. Disabling STP on one or more ports puts those ports in FORWARDING state; all BPDUs received on those ports will be disregarded.
unconfig stpd {<stpd_name> | all}	Restores default STP values to a particular STPD or to all STPDs.

QoS Commands

Command	Description
show qosprofile {<qosname> | all}	Displays QoS profile information.
config qosmode [ingress | egress]	Changes the QoS mode to ingress mode or egress mode.
create qosprofile <qosname>	Creates a QoS profile. The default values assigned to a created QoS profile are as follows: ❑ Minimum bandwidth — 0% ❑ Maximum bandwidth — 100% ❑ Priority — low
delete qosprofile <qosname>	Deletes a QoS profile.
config qosprofile <qosname> {minbw <percent>} {maxbw <percent>} {priority <level>}	Configures a QoS profile. Specify: ❑ `minbw` — The minimum bandwidth percentage guaranteed to be available to this queue. The default setting is 0. ❑ `maxbw` — The maximum bandwidth percentage that this queue is permitted to use. The default setting is 100. ❑ `priority` — The service priority for this queue. Settings include low, medium-low, medium, high. The default setting is low. Available in egress mode, only.
enable pace	Enables recognition of the PACE bit. Available in ingress mode, only.
disable pace	Disables recognition of the PACE bit. Available in ingress mode, only.

Basic IP Commands

Command	Description
show ipconfig {vlan [<name> | all]}	Displays configuration information for one or more VLANs.
show ipstats {vlan [<name | all]}	Displays statistics of packets handled by the CPU.
show ipfdb {<ipaddress> <mask> | vlan <name> | all}	Displays the contents of the IP forwarding database table.
clear ipfdb [<ipaddress> <mask> | vlan <name> | all]	Clears the dynamic entries in the IP forwarding database table.
enable ipforwarding {vlan <name> | all}	Enables IP forwarding to an IP interface. If `all` is specified, then all the configured IP interfaces are affected. If no optional argument is provided, the `all` is assumed. When new IP interfaces are added, the interface is configured to have `ipforwarding` disabled by default.
disable ipforwarding {vlan <name> | all}	Disables IP forwarding on one or all IP interfaces.
enable ipforwarding broadcast {vlan <name> | all}	Enables forwarding of IP broadcast traffic on an IP interface. If `all` is specified, then all the configured IP interfaces are affected. If no optional argument is provided, then `all` is assumed.When new IP interfaces are added, the default is to have broadcast enabled.
disable ipforwarding broadcast {vlan <name> | all}	Disables IP broadcast forwarding on one or all IP interfaces.
enable bootp vlan [<name> | all]	Enables the generation and processing of BootP packets on a VLAN. The default setting is enabled for all VLANs.
disable bootp vlan [<name> | all]	Disables the generation and processing of BootP packets.
enable bootprelay	Enables the BootP relay function on the router.
disable bootprelay	Disables the BootP relay function on the router.
config bootprelay add <ipaddress>	Adds IP addresses to be used as IP destinations to forward BootP packets.
config bootprelay delete [<ipaddress> | all]	Deletes one or all IP addresses that were used as IP destinations to forward BootP packets.
enable multinetting	Enables IP multinetting on the switch.
disable multinetting	Disables IP multinetting on the switch.

IP ARP Commands

Command	Description
show iparp {<ipaddress> | vlan <name> | all | permanent}	Displays the current Address Resolution Protocol (ARP) cache for a selected IP address, VLAN, or all entries.
clear iparp [<ipaddress> | vlan <name> | all]	Removes dynamic entries in the IP ARP table.
config iparp add <ipaddress> <mac_address>	Adds a permanent IP ARP entry to the system.
config iparp delete <ipaddress>	Removes an IP ARP entry from the table.
config iparp add proxy <ipaddress> {<mask>} {<mac_address>} {always}	Configures proxy ARP entries. Up to 64 proxy ARP entries can be configured. When <mask> is not specified, a how address with the mask 255.255.255.255 is assumed. When <mac_address> is not specified, the MAC address of the switch is used in the ARP Response. When always is specified, the switch answers ARP Requests without filtering requests that belong to the same subnet of the receiving router interface.
config iparp delete proxy [<ipaddress> {<mask>} | all]	Deletes one or all proxy ARP entries.
show iparp proxy {<ipaddress> {<mask>} | all}	Displays the proxy ARP table.

IP Route Table Commands

Command	Description
show iproute vlan {<name> | all | permanent | <ipaddress> <mask>}	Displays the contents of the IP routing table.
config iproute add default <gateway> {<metric>}	Adds a default gateway to the routing table. A default gateway must be located on a configured IP interface. If no metric is specified, the default metric of 1 is used.
config iproute delete default <gateway>	Deletes a default gateway.
config iproute add <ipaddress> <mask> <gateway> <metric>	Adds a static address to the routing table. Use a value of 255.255.255.255 for mask to indicate a host entry.
config iproute delete <ipaddress> <mask> <gateway>	Deletes a static address from the routing table.
config iproute add blackhole <ipaddress> <mask>	Adds a blackhole address to the routing table. All traffic destined for the configured IP address is dropped, and no Internet Control Message Protocol (ICMP) message is generated.
config iproute delete blackhole <ipaddress> <mask>	Deletes a blackhole address from the routing table.
show ipqos {<ip_dest_address> <mask> | all}	Displays the IP QoS table.
config ipqos add <ip_dest_address>/ <mask_length> qosprofile <qosname>	Adds a QoS profile to an IP destination address. The <mask_length> is the number of bits (1 - 32) in the mask.
config ipqos delete <ip_dest_address> <mask>	Deletes a QoS profile from an IP destination address.

IP Route Table Commands *(Continued)*

Command	Description
enable iproute sharing	Enables load sharing if multiple routes to the same destination are available. Only paths with the same lowest cost are shared. The default setting is enabled.
disable iproute sharing	Disables load sharing for multiple routes.

ICMP and IGMP Commands

Command	Description
enable icmp redirects {vlan <name> | all}	Enables generation of ICMP redirect messages on one or more VLANs. The default setting is enabled.
disable icmp redirects {vlan <name> | all}	Disables the generation of ICMP redirects on one or more VLANs.
enable icmp unreachables {vlan <name> | all}	Enables the generation of ICMP unreachable messages on one or more VLANs. The default setting is enabled.
disable icmp unreachables	Disables the generation of ICMP unreachable messages on one or more VLANs.
enable icmp useredirects	Enables the modification of route table information when an ICMP redirect message is received. The default setting is disabled.
disable icmp useredirects	Disables the changing of routing table information when an ICMP redirect message is received.
enable irdp {vlan <name> | all}	Enables the generation of ICMP router advertisement messages on one or more VLANs. The default setting is enabled.
disable irdp {vlan <name> | all}	Disables the generation of router advertisement messages on one or more VLANs.
config irdp [multicast | broadcast]	Configures the destination address of the router advertisement messages. The default setting is multicast.
config irdp <mininterval> <maxinterval> <lifetime> <preference>	Configures the router advertisement message timers, using seconds. Specify: ❑ `mininterval` — The minimum amount of time between router advertisements. The default setting is 450 seconds. ❑ `maxinterval` — The maximum time between router advertisements. The default setting is 600 seconds. ❑ `lifetime` — The default setting is 1,800 seconds. ❑ `preference` — The preference level of the router. An IRDP client always uses the router with the highest preference level. Change this setting to encourage or discourage the use of this router. The default setting is 0.
unconfig icmp	Resets all ICMP settings to the default values.
unconfig irdp	Resets all router advertisement settings to the default values.

IP RIP Commands

Command	Description
show rip {vlan <name> | all}	Displays RIP configuration and statistics for one or all VLANs.
show rip stat {vlan <name> | all}	Displays RIP-specific statistics for one or all VLANs.
enable rip	Enables RIP.
disable rip	Disables RIP.
config rip add {vlan <name> | all}	Configures RIP on an IP interface. If no VLAN is specified, then `all` is assumed. When an IP interface is created, RIP configuration is disabled on the interface by default.
config rip delete [vlan <name> | all]	Disables RIP on an IP interface. When RIP is disabled on the interface the parameters are not reset to their defaults.
enable rip aggregation	Enables RIP aggregation of subnet information on a RIP version 2 interface. The default setting is enabled.
disable rip aggregation	Disables the RIP aggregation of subnet information on a RIP version 2 interface.
enable rip splithorizon	Enables the split horizon algorithm for RIP. Default setting is enabled.
disable rip splithorizon	Disables split horizon.
enable rip poisonreverse	Enables the split horizon with poison-reverse algorithm for RIP. The default setting is enabled.
disable rip poisonreverse	Disables poison reverse.
enable rip triggerupdate	Enables triggered updates.
disable rip triggerupdate	Disables triggered updates.
enable rip exportstatic	Enables the advertisement of static routes using RIP.
disable rip exportstatic	Disables the filtering of static routes.
config rip updatetime {<delay>}	Changes the periodic RIP update timer. The default setting is 30 seconds.
config rip routetimeout {<delay>}	Configures the route timeout. The default setting is 180 seconds.
config rip garbagetime {<delay>}	Configures the RIP garbage time. The default setting is 120 seconds.
config rip txmode [none | v1only | v1comp | v2only] {vlan <name> | all}	Changes the RIP transmission mode for one or more VLANs. Specify: ❑ `none` — Do not transmit any packets on this interface. ❑ `v1only` — Transmit RIP version 1 format packets to the broadcast address. ❑ `v1comp` — Transmit version 2 format packets to the broadcast address. ❑ `v2only` — Transmit version 2 format packets to the RIP multicast address. ❑ If no VLAN is specified, the setting is applied to all VLANs. The default setting is `v2only`.

IP RIP Commands *(Continued)*

Command	Description
config rip rxmode [none | v1only | v2only | any] {vlan <name> | all}	Changes the RIP receive mode for one or more VLANs. Specify: ❑ none — Drop all received RIP packets. ❑ v1only — Accept only RIP version 1 format packets. ❑ v2only — Accept only RIP version 2 format packets. ❑ any — Accept both version 1 and version 2 packets. If no VLAN is specified, the setting is applied to all VLANs. The default setting is any.
unconfig rip {vlan <name> | all}	Resets all RIP parameters to the default VLAN. Does not change the enable/disable state of the RIP settings.

IP OSPF Commands

Command	Description
show ospf	Displays global OSPF information.
show ospf area {<areaid> | all}	Displays information about a particular OSPF area, or all ospf areas.
show ospf interfaces {vlan <name> | area <areaid> | all}	Displays information about one or all OSPF interfaces. If no argument is specific, all OSPF interfaces are displayed.
show ospf lsdb {detail} {area <areaid> | all} {router | network | summary_net | summary_asb | as_external | all}	Displays a table of the current link state database. You can filter the display using either the area ID or the remote router's router ID, or the link state ID. The default is all with no detail. If detail is specified, each entry includes complete LSA information.
show ospf virtual-link {<areaid> <routerid> | all}	Displays virtual link information about a particular router or all routers.
enable ospf	Enables OSPF process for the router.
disable ospf	Disables OSPF.
config ospf routerid [automatic | <routerid>]	Configures the OSPF router ID. If automatic is specified, the switch uses the largest IP interface address as the OSPF router ID. The default setting is automatic.
create ospf area <areaid>	Creates an OSPF area. By default, the OSPF area 0.0.0.0 is created.
delete ospf area [<areaid> | all]	Deletes and OSPF area. Once an OSPF area is removed, the associated OSPF area and OSPF interface information is removed.
config ospf area <areaid> stub [summary | nosummary] stub-default-cost <cost>	Configures an OSPF area as a stub area. The default setting is normal.
config ospf area <areaid> normal	Configures an OSFP area as a normal area. The default setting is normal.
enable ospf exportstatic type [1 | 2]	Exports statically configured routes to other OSPF routers. The default setting is disabled.
disable ospf exportstatic	Disables exporting of statically configured routes.
config ospf vlan <name> area <areaid>	Associates a VLAN (router interface) with an OSPF area. All router interfaces must have an associated OSPF area. The default <areaid> is 0 (backbone area).
config ospf add [vlan <name> | all]	Enables OSPF on one or all VLANs (router interfaces).

IP OSPF Commands *(Continued)*

Command	Description
config ospf delete [vlan <name> | all]	Disables OSPF on one or all VLANs (router interfaces).
config ospf area add range <ipaddress> <mask> [advertise | noadvertise]	Configures a range of IP addresses in an OSPF area. If advertised, the range is exported as a single summary link state advertisement by the ABR.
config ospf area delete range <ipaddress> <mask>	Deletes a range of IP addresses in an OSPF area.
config ospf add virtual-link <routerid> <areaid>	Adds a virtual link connected to another ABR. Specify the following: ❑ `routerid` — Far end router interface number. ❑ `areaid` — Transit area used for connecting the two end-points. The transit area cannot have the IP address 0.0.0.0.
config ospf delete virtual-link <routerid> <areaid>	Removes a virtual link.
config ospf [vlan <name> | area <areaid> | virtual-link <routerid> <areaid>] authentication [simple-password <password> | md5 <md5_key_id> <md5_key>| none]	Specifies the authentication password (up to 8 characters) or MD5 key for one or all interfaces in an area. The `<md5_key>` is a numeric value with the range 0 - 65536. When the OSPF area is specified, authentication information is applied to all OSPF interfaces within the area.
config ospf [vlan <name> | area <areaid> | virtual-link <routerid>] timer <retransmission_interval> <transmission_delay> <hello_interval> <dead_interval>	Configures the timers for one interface or all interfaces in the same OSPF area. The following default, minimum, and maximum values (in seconds) are used: ❑ `Retransmission interval` Default: 5 Minimum: 0 Maximum: 3600 ❑ `Transmission delay` Default: 1 Minimum: 0 Maximum: 3600 ❑ `Hello interval` Default: 10 Minimum: 1 Maximum: 65535 ❑ `Dead interval` Default: 40 Minimum: 1 Maximum: 2147483647
config ospf [vlan <name> | area <areaid> | all] cost <number>	Configures the cost metric of one or all interface(s). The default cost is 1.
config ospf [vlan <name> | area <areaid> | all] priority <number>	Configures the priority used in the designated router election algorithm for one or all IP interface(s) of for all the interfaces within the area. The range is 0 through 255, and the default setting is 1.
config ospf spf-hold-time {<seconds>}	Configures the minimum number of seconds between SPF recalculation. The default setting is 3 seconds.

IP Multicast Routing Commands

Command	Description
show ipmc cache {<group> {<src_ipaddress> <mask>}} | all}	Displays the IP multicast forwarding cache. Information displayed includes the following: ❑ IP group address ❑ IP source address and mask ❑ Upstream neighbor ❑ Interface to upstream neighbor ❑ Route expiration timer ❑ Routing protocol ❑ List of next hop interfaces and protocols
clear ipmc cache {<group> {<src_ipaddress> <mask>}} | all]	Resets the IP multicast cache table. If no option is specified, all IP multicast cache entries are flushed.
config ipmc cache timeout <seconds>	Configures the aging time for IP multicast cache entries. The default setting is 300 seconds.
enable ipmcforwarding {<vlan <name> | all}	Enables IP multicast forwarding on an IP interface. If a `ll` is specified, all configured IP interfaces are affected. When new IP interfaces are added, ipforwarding is disabled by default.
disable ipmcforwarding {vlan <name> | all}	Disables IP multicast forwarding.
show igmp snooping {<vlan <name> | all}	Displays IGMP snooping registration information, and a summary of all IGMP timers and states.
clear igmp snooping [vlan <name> | all]	Removes one or more IGMP snooping entries.
enable igmp {vlan <name> | all}	Enables IGMP on a router interface. The default setting is enabled.
disable igmp {vlan <name> | all}	Disables IGMP on a router interface.
enable igmp snooping {vlan <name> | all}	Enables IGMP snooping. The default setting is disabled.
disable igmp snooping {vlan <name> | all}	Disables IGMP snooping.
config igmp <query_interval> <query_response_interval> <last_member_query_interval>	Configures the IGMP timers. Timers are based on RFC2236. Specify the following: ❑ `query_interval` — The amount of time, in seconds, the switch waits between sending out General Queries. The range is 1 to 4294967296 seconds (136 years). The default is 125 seconds. ❑ `query_response_interval` — The maximum response time inserted into the periodic General Queries. The range is 1 to 25 seconds. The default setting is 10 seconds. ❑ `last_member_query_interval` — The maximum response time inserted into a Group-Specific Query sent in response to a Leave group message. The range is 1 to 25 seconds. The default setting is 1 second.

IP Multicast Routing Commands *(Continued)*

Command	Description
config igmp snooping <router_timeout> <host_timeout>	Configures the IGMP snooping timers. Timers should be set to approximately 2.5 times the router query interval in use on the network. Specify the following: ❑ `router_timeout` — The interval, in seconds, between the last time the router was discovered and the current time. The range is 10 to 4294967296 seconds (136 years). The default setting is 260 seconds. ❑ `host_timeout` — The interval, in seconds, between the last IGMP group report message from the host and the current time. The range is 10 to 4294967296 seconds (136 years). The default setting is 260 seconds.
unconfig igmp	Resets all IGMP settings to the default values.

DVMRP Commands

Command	Description
show dvmrp {vlan <name> | route | all}	Displays the DVMRP configuration and statistics, or the unicast route table. The default setting is `all`.
enable dvmrp	Enables DVMRP on the switch. The default setting is disabled.
disable dvmrp	Disables DVMRP on the switch.
config dvmrp add {vlan <name> | all}	Enables DVMRP on an IP interface. When an IP interface is created, DVMRP is enabled by default.
config dvmrp delete {vlan <name> | all}	Disables DVMRP on an IP interface.
config dvmrp vlan <name> timer <probe_interval> <neighbor_timeout_interval>	Configures DVMRP interface timers. Specify the following: ❑ `probe_interval` — The amount of time that the switch waits between transmitting DVMRP probe messages. The range is 1 to 4294967296 seconds (136 years). The default setting is 10 seconds. ❑ `neighbor_timeout_interval` — The amount of time before a DVMRP neighbor route is declared to be down. The range is 1 to 4294967296 seconds (136 years). The default setting is 35 seconds.
config dvmrp timer <route_report_interval> <route_replacement_time>	Configures the global DVMRP timers. Specify the following: ❑ `route_report_interval` — The amount of time the switch waits between transmitting periodic route report packets. The range is 1 to 4294967296 seconds (136 years). The default setting is 60 seconds. ❑ `route_replacement_time` — The hold-down time before a new route is learned, once the previous route has been deleted. The range is 1 to 4294967296 seconds (136 years). The default setting is 140 seconds.
unconfig dvmrp [vlan <name> | all]	Resets the DVMRP timers to their default settings.

Logging Commands

Command	Description
show log config	Displays the log configuration.
show log {<priority>} {<subsystem>}	Displays the current snapshot of the log. Options include: ❑ `priority` — Filters the log to display messages with the selected priority or higher (more critical). Priorities include critical, warning, and informational. If not specified, informational priority messages and higher are displayed. ❑ `subsystem` — Filters the log to display messages associated with the selected switch subsystem. Subsystems include Syst, STP, Brdg, SNMP, Telnet, VLAN, and Port. If not specified, all subsystems are displayed.
clear log {static}	Clears the log. If `static` is specified, the critical log messages are also cleared.
config log display {<priority>} {<subsystem>}	Configures the real-time log display. Options include: ❑ `priority` — Filters the log to display messages with the selected priority or higher (more critical). Priorities include critical, warning, and informational. If not specified, informational priority messages and higher are displayed. ❑ `subsystem` — Filters the log to display messages associated with the selected switch subsystem. Subsystems include Syst, STP Brdg, SNMP, Telnet, VLAN, and Port. If not specified, all subsystems are displayed.
config syslog <ipaddress> <facility> {<priority>} {<subsystem>}	Configures the syslog host address and filter messages sent to the syslog host. Options include: ❑ `ipaddress` — The IP address of the syslog host. ❑ `facility` — The syslog facility level for local use. ❑ `priority` — Filters the log to display messages with the selected priority or higher (more critical). Priorities include critical, warning, and informational. If not specified, only critical priority messages are sent to the syslog host. ❑ `subsystem` — Filters the log to display messages associated with the selected switch subsystem. Subsystems include Syst, STP Brdg, SNMP, Telnet, VLAN, and Port. If not specified, all subsystems are sent to the syslog host.
enable log display	Enables the log display.
disable log display	Disables the log display.
enable syslog	Enables logging to a remote syslog host.
disable syslog	Disables logging to a remote syslog host.

Configuration and Image Commands

Command	Description
save {config} {primary | secondary}	Saves the current configuration of the switch to NVRAM. You can specify the primary or secondary configuration area. If not specified, the configuration is saved to the configuration area currently in use.
use config {primary | secondary}	Configures the switch to use a particular configuration on the next reboot. Options include the primary configuration area or the secondary configuration area. If not specified, the switch will use the primary configuration area.
use image [primary | secondary]	Configures the switch to use a particular image on the next reboot.
download image [xmodem | <ipaddress> <filename>] {primary | secondary}	Downloads a new image by way of xmodem using the serial port, or from a TFTP server over then network. If no parameters are specified, the image is saved to the current image.
upload config <ipaddress> <filename> {every <time> | cancel}	Uploads the current runtime configuration to the specified TFTP server. If `every <time>` is specified, the switch automatically saves the configuration to the server once per day, at the specified time. To cancel automatic upload, use the `cancel` option. If no options are specified, the current configuration is uploaded immediately.
download config <ipaddress> <filename>	Downloads a previously saved ASCII configuration file from a specific IP host.
show config	Displays the current switch configuration to the terminal. You can then capture the output and store it as a file.